

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Universal Forest Products

Delaware Manufacturing Extension Partnership

Universal Forest Products Reaps Benefits of Value Stream Mapping

Client Profile:

Universal Forest Products (UFP) began by selling to the manufactured housing industry in 1955, and today has grown to become a major supplier to several markets. UFP currently manufactures wood and wood alternative products, components, structural lumber, and wood packaging for site-built construction, retail home centers, industry and manufactured housing. Universal is the largest manufacturer of engineered roof systems and is a leading producer of pressure treated lumber nation wide. UFP is also the largest customer of North America's mills. Headquartered in Grand Rapids, Michigan, there are over 100 Universal Forest Products locations in North America. The facility in Georgetown, Delaware specializes in building trusses for roofs of chicken houses and employs 35 people.

Situation:

Soon after Jeff Quante arrived as plant manager, Universal began a company-wide initiative to implement and standardize Lean principles throughout its manufacturing sites. To get the process moving in Georgetown, Quante reached out to the Delaware Manufacturing Extension Partnership (DEMEP), a NIST MEP network affiliate, for help.

Solution:

DEMEP trainers Lisa Weis and Kim Kilby proposed a systematic approach that is part of the DEMEP's Lean Enterprise program. They started with a one-day Principles of Lean Manufacturing workshop, which were followed by four other training and Kaizen events. Every employee involved in manufacturing at the plant participated in the Lean Manufacturing Workshop and the half-day Visual Workplace Organization and Standardization orientation. Smaller groups participated in more intensive three-day Kaizen programs on Value Stream Mapping, 5S Visual Workplace Organization and Standardization, Set-up Reduction/Quick Changeover, and Plant Layout/Flow.

One of the key challenges facing the Georgetown plant was that managers recognized there were so many things to improve that they couldn't prioritize what should be done first. After the Value Stream Mapping (VSM) event, Quante and Shawn Walker, UFP's Continuous Improvement Facilitator, identified problems that DEMEP trainers could help them solve. VMS is a tool that identifies areas of improvement within an organization and provides a framework for development of a roadmap for the future. During and following the training, the plant's layout and procedures began to change. The 'engineered wood,' which had once been scattered throughout the plant, was moved into its own section in the receiving area. The wood is now arranged in a series of U-shaped cells, large enough for a forklift operator to maneuver inside and gather the quantity for a particular job. The plant also has a mango saw, used to make specialty cuts on lumber for jobs that require many pieces of different sizes. DEMEP and Universal identified a major opportunity: employees were walking nearly two miles a day to bring the needed lumber to the saw and then to the gantry tables. The saw was moved to a different area of the plant, closer to the lumber and to the gantry tables where the cut pieces were taken for

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assembly. Hangers, bracket-like metal supports used to structuralize an assembled roof package had been kept in five different locations spread out all over the plant. These materials were inventoried, then properly organized and located at the point of use where the production associates actually use the materials, eliminating wasted motion.

DEMEP training also led to new procedures to develop standard work. Every time a new job is scheduled, a work order is produced that lists all the parts needed to complete it. A colored sticker is placed on the work order paperwork. After the sawyer cuts the truss components, lumber pickers gather the cut parts required for the job, place them on a cart and mark them with a flag the same color as the sticker on the paperwork. The company has also eliminated a step in truss assembly called 'pre-plating.' In pre-plating, workers would align the smaller pieces of a truss on the floor and attach them with metal plates. Then they would pick up the partly assembled pieces and place them on a table where the plates would be fastened securely to the remainder of the truss. Now the plates are fastened once, on the large tables on the assembly line.

Results:

- * Improved on-time delivery from 95 percent to 100 percent.
- * Reduced production time from 2 days to 1 day.
- * Reduced rework by 40 percent.
- * Improved capacity by 90 percent.
- * Increased floor space by 15 percent.
- * Reduced overtime by 20 percent.
- * Improved employee safety and morale.

Testimonial:

"Thanks to DEMEP, Universal Forest Products has become fortified and strategically focused by lean concepts and is taking significant baby steps on the great journey of continuous improvement."

Jeff Quante, Plant Manager